

Response to Office Action of October 27, 2006
Application No. 10/557,758

Remarks:

Reconsideration of this application in view of the above-specified amendments and following remarks is respectfully requested. Claims 1-3, 5-26 and 28 are currently pending. Claims 4, 22, 27 and 29 have been cancelled. Claims 1-3, 5-21, 25, 26 and 28 presently stand rejected for the reasons of record. Claims 22-24 have been objected to for the reasons of record. Claims 2, 3, 12, 14, 15, 23, and 24 have been amended. No new matter has been added. For purposes of clarity, Applicant addresses each of the Examiner's concerns in the order set forth in the Office Action.

As an initial matter, Applicant notes that restriction under 35 USC §§ 121 and 372 is required. During a telephone conversation with the Examiner on October 23, 2006, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-3, 5-26 and 28. Applicant hereby affirms that election.

Claims 22-24 have been objected to under 37 CFR § 1.75(c) as being indefinite for failing to further limit the subject matter of a previous claims. In order to obviate these objections, claim 22 has been cancelled while claims 23 and 24 have each been amended such they now depend on claim 15. In view thereof, Applicant respectfully requests that these objections be withdrawn.

Claim 14 has been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In short, this claim is confusing because the initial clauses require the exposing of raw polymeric material to plasticizing gas while a later clause refers to "unexposed polymeric material." For purposes of added clarity, the offending clause that reads "unexposed polymeric material" has been amended such that it now reads "raw polymeric material." In view thereof, Applicant respectfully request that this ground of rejection be withdrawn.

Claims 12, 15-21, 25 and 28 have been rejected under 35 USC § 103(a) as being obvious in view of U.S. Patent No. 5,684,055 to Kumar *et al.* in combination with U.S. Patent No. 4,386,188 to Grancio *et al.* Applicant respectfully disagrees and traverses these grounds of rejection. With respect to this combination of references, the Examiner has taken the following position:

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Kumar et al. disclose or suggest the basic claimed process for making a shaped article of manufacture from a sheet or roll of a thermoplastic material including (1) pressurizing the sheet or roll of the thermoplastic material with a plasticizing gas (it is submitted that the pressurizing gas of Kumar et al. inherently has the plasticizing effect) under a selected pressure and period of time to yield a reversibly plasticized thermoplastic material, the thermoplastic material being impregnated with the plasticizing gas, (2) depressurizing the plasticized thermoplastic material to thereby desorb some of the gas from the plasticized thermoplastic material, and (3) forming the plasticized thermoplastic material into the shaped article of manufacture.

Office Action at spanning paragraph, pages 3-4.

In an attempt to discredit all of the present claim limitations, and at least with regards to claims 15-21, 25 and 28, the Examiner goes on to mistakenly conclude that:

Kumar et al. at least suggest that the step of forming occurs before the impregnated plasticizing gas falls below about 0.5% by weight of the plasticized thermoplastic material by reporting at column 6, lines 1 and 2 that even the finished article's specific gravity is 0.3 versus 1.3 for solid PET.

Office Action, page 4, lines 7-11.

The Examiner's reasoning is incorrect because the reporting of the specific gravity value of foamed PET, 0.3, versus that of solid unfoamed PET, 1.3, does not in any way teach or suggest that the step of forming [of the claimed invention] must occur before the plasticizing gas concentration [impregnated within the polymer] falls below about 0.5% by weight. Indeed, Kumar et al. expressly teaches that "[o]nce the polymer roll (permeated with a gas channeling means such as porous paper sheet) has been exposed to gas and is taken out from the pressure vessel to atmospheric pressure, the gas begins to leave the polymer sheet." Kumar et al. at col. 5, lines 20-24. In view of the teachings of the prior art, it is respectfully submitted that the plasticizing gas concentration of the various finished foamed articles and solid PET samples disclosed in Kumar et al. is, in all instances, about the same; namely, a concentration of about 0.0% by weight (meaning that most all of the plasticizing gas dissipates out of the polymer, and is replaced with air, over a relatively short period of time). As such, the Examiner's asserted correlation between plasticizing gas concentration and specific gravity value is untenable. Accordingly, Applicant respectfully request that these grounds of rejection be withdrawn.

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In addition to the foregoing, the Examiner further concludes that:

Kumar et al. do not teach the aspect of mixing virgin material with at least 5% of previously processed thermoplastic material, but such is taught by Grancio et al. at column 3, lines 57-64 and column 10, lines 3 and 4. It would have been obvious to one of ordinary skill in the art to incorporate this aspect taught by Grancio et al. into the method of Kumar et al. in order to conserve raw material.

Office Action, page 4, lines 11-15.

Applicant agrees with the Examiner's assertion that Kumar *et al.* does not teach or suggest the mixing of virgin material with previously processed material. To remedy this shortcoming, however, the Examiner has taken the position that because Grancio *et al.* teaches the recyclability of certain unfoamed polyolefins, it necessarily follows that Grancio *et al.* also teaches the recyclability of foamed polyolefins as well. The Examiner's position in this regard amounts to an improper "obvious to try" rationale and must be rejected. To be sure, Applicant has further amended claims 2, 3, 12, 14, and 15 such that they now recite that the previously processed material must be a foamed material. It is respectfully submitted that Grancio *et al.* is silent with respect to the reuse and/or recycling of previously foamed materials. It is further respectfully submitted that (and in the context of the prior art) the reuse and/or recycling of previously foamed thermoplastic materials is extraordinarily difficult, if not impossible, to achieve because of the irreversible chemical changes that occur to the thermoplastic material during foaming/processing. In view of the foregoing, Applicant respectfully requests that the above-noted obviousness rejections be withdrawn.

Claim 26 has been rejected under 35 USC § 103(a) as being obvious in view of U.S. Patent No. 5,684,055 to Kumar *et al.* in combination with U.S. Patent No. 4,386,188 to Grancio *et al.* and U.S. Patent No. 5,223,545 to Kumar. Applicant respectfully disagrees and traverses this ground of rejection. With respect to this combination of references, the Examiner has taken the following position:

Kumar notes at column 1, lines 61 to column 2, line 2 that an effect of exposure of polymer to carbon dioxide is the formation of an integral skin against the foam. Given this teaching of Kumar, one of ordinary skill in the art would have expected at least some of the portions of the article of Kumar et al. to be unfoamed at the integral skin portions.

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Office Action, page 5, lines 10-14.

Applicant agrees that Kumar *et al.* and Kumar teach foamed articles having surrounding integral skin layers that are unfoamed. The Examiner's position notwithstanding, Applicant fails to see how the above-noted combination of references establishes a *prima facie* case of obviousness. In review, claim 26 depends on claim 15 and is directed to a process for making an unfoamed shaped article of manufacture, wherein the step of forming the gas impregnated thermoplastic material into the unfoamed shaped article of manufacture occurs while the plasticized thermoplastic material is under pressure of the plasticizing gas. It is respectfully submitted that (1) neither Kumar *et al.* nor Kumar teach or suggest a process for making an unfoamed article of manufacture (rather, these patents disclose foamed articles in all instances); (2) neither Kumar *et al.* nor Kumar teach or suggest a process for making a shaped article of manufacture (these patents are silent with respect to shaping and/or thermoforming); and (3) neither Kumar *et al.* nor Kumar teach or suggest a process for making an unfoamed shaped article of manufacture while the plasticized thermoplastic material is under pressure of the plasticizing gas (meaning above atmospheric pressure). In view of the foregoing, Applicant respectfully requests that the above-noted obviousness rejection be withdrawn.

Claims 1, 2, 5-7, 9-11 and 13 have been rejected under 35 USC § 103(a) as being obvious in view of U.S. Patent No. 5,684,055 to Kumar *et al.* in combination with U.S. Patent No. 4,386,188 to Grancio *et al.* and U.S. Patent No. 4,304,747 to Lake. Applicant respectfully disagrees and traverses these grounds of rejection. More specifically, Applicant respectfully submits that these claims, as amended, are patentably distinguishable over the prior art of record for the reasons noted above. Accordingly, Applicant respectfully requests that these grounds of rejection be withdrawn.

Claims 3 and 8 have been rejected under 35 USC § 103(a) as being obvious in view of U.S. Patent No. 5,684,055 to Kumar *et al.* in combination with U.S. Patent No. 4,386,188 to Grancio *et al.*, U.S. Patent No. 5,223,545 to Kumar and U.S. Patent No. 4,304,747 to Lake. Applicant respectfully disagrees and traverses these grounds of rejection. More specifically, Applicant respectfully submits that these claims, as amended, are patentably distinguishable over the prior art of record for the reasons noted

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above. Accordingly, Applicant respectfully requests that these grounds of rejection be withdrawn.

In view of the above remarks and claim amendments allowance of claims 1-3, 5-26 and 28 is earnestly solicited. A good faith effort has been made to place this application in condition for allowance. If any further matter requires attention prior to allowance, the Examiner is respectfully requested to contact the undersigned attorney at (206) 568-3100 to resolve the same.

Respectfully submitted,



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